

## Do your repairs and replacements meet the latest ATEX

# dust regulations?

**TRADITIONAL ATEX INDUSTRIES – SUCH AS PETROCHEMICAL PROCESSING FACILITIES – ARE WELL USED TO CONFORMITY. BUT MAINTENANCE OPERATIVES IN A MUCH WIDER SECTION OF INDUSTRY NOW NEED TO MAKE SURE THAT REPAIRS AND MAINTENANCE MEET THE CORRECT CERTIFICATION FOR THE RECENTLY DEFINED ATEX ZONE 20 TO 22 DUST CONDITIONS. COMPANIES NEED TO USE SUPPLIERS AND REPAIRERS WHO CORRECTLY CERTIFY MACHINES, IF THEY ARE TO AVOID LIABILITY SHOULD SOMETHING GO WRONG.**

There are many companies that have been subject to ATEX regulations but perhaps not fully understood them, this is further compounded due to the inclusion of dust laden atmospheres. You may be aware that explosions and fires caused by dust can be equally as devastating as those caused by explosive gases and vapours, but not aware what constitutes a risk and how to address it. With the Dangerous Substances and Explosive Atmospheres Regulations (DSEAR) 2002 also requiring employers to control the risks from fire and explosions, this is obviously not something which can be overlooked.

However, although the issue affects a huge range of products – from motors to belt drives to couplings – compliance is actually relatively simple and the operating parameters required are not extreme.

The previous regulations for explosive atmospheres did not account for the risk of explosion created by dust. However, there have been several large explosions investigated in recent years, in areas such as crop storage, food processing, coal processing and plastics, that are now attributed to dust. Both atmospheric and settled dust can pose a problem and are now included in the regulations.

Most industries used to dealing with explosive gases and vapours – typically from the petrochemical sector – are unlikely to have to make many, if any, changes as a result of the new directives. Companies in this sector will also know what type of new equipment they need to use and that it is advisable for an approved repairer to be used to certify a repaired motor or machine.

Companies employing equipment that has not been certified by the supplier or repairer are liable under ATEX 137 should anything go wrong. Industries such as waste recycling and coal mining are now being joined for the first time by paper, processing, food preparation, textiles, woodworking and companies supplying machines into these sectors, and require the most information.

For these sectors newly-covered by the legislation, when assessing current installations or designing new plant, many problems can be avoided by considering containment of the dust within the process equipment in the first place, or venting and extracting it efficiently.

### Zones

Zone classification is the responsibility of the company on whose premises machinery is operating, and of any company manufacturing or repairing machinery that may create a risk or is designed to be used in a risk area.

The zone classification depends on the type of hazard present and the duration of machinery exposure. Explosive gases, for example, are zoned 0, 1 or 2 based on the frequency of their presence and their concentration. Dust laden atmospheres created by activities such as composite woodworking and flour production are zoned 20, 21 and 22 based on the level of exposure. Settled dust is also included and can fall into any of the three categories.

Equipment used in these zones must be suitable for its location, and must not represent a viable ignition source for the flammable materials used in the zone.

New equipment will obviously be specified to meet ATEX regulations, but non-ATEX certified equipment already in place represents a different problem. It may be possible to leave it in place if its safety can be justified for its use or if it can be made safe. Whether to replace or modify depends on various factors. It may, for example, be more cost-effective to replace a non-compliant electric motor with an ATEX approved version, whereas a large item of mechanical equipment may prove less costly to modify.

### What to look out for

The ATEX regulations cover a huge range of products, so it is important to be aware of problems which might arise with machinery such as conveyors, mixers, extractors, fans and pumps in the new dust zones. Atmospheric dust is the most dangerous, and something as simple as flour can cause powerful explosions. For this reason extraction equipment should be used and motors, for example, working in this environment require the higher IP65 level of enclosure sealing and a controlled maximum surface temperature of 125°C.

Settled dust is a wider risk than atmospheric dust, and tends to cause fires started by excessive heat. The smouldering temperature of common dust (i.e. not explosive chemical compounds) as varied as cocoa or paper is generally over 200°C, so motor sealing to IP55 and a maximum surface temperature of 125°C are adequate. It is important to note here that neither of these motors is EEx type rated and they are therefore less costly.

### Essentials

Machinery must have full certification paperwork available from the manufacturer for inspection when requested. It must also carry correct identifying labelling, including a re-assessed CE mark conforming to the new regulations. This is why purchasing quality equipment from a knowledgeable supplier – or in the case of motors, a rewind from a reputable firm – is essential for peace of mind and, ultimately, people's safety. Older certified motors do not need to be re-certified, but the repairer does.

***ERIKS was one of the first companies to have a motor repair workshop approved to undertake ATEX repairs.***

### The dates

Product manufacturers, or those taking responsibility for certification of supplied equipment, can be held legally responsible for accidents due to non-conformity with the new directives since the legislation came fully into force in 2003. The newly defined zones will affect many new operations, so if you are in any doubt about your responsibilities, conformity or the best way to achieve it, you should talk to a supplier who understands your industry, the legislation, and the machinery to which it applies.

